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Detailed Stratigraphy and Micropaleontology of a Possible Cretaceous-Tertiary Boundary in the El Rayo Formation

The El Rayo Formation was first described in 1956 as a feldspathic olivine basalt porphyry with interbedded lenses of volcanic conglomerate and dark massive limestones. In 2002, Llerandi and Martinez proposed that the El Rayo Formation extends very high into the Maastrichtian and that it may contain the Cretaceous-Tertiary Boundary. It is known that foraminiferal fauna changes drastically in size and shape from the Cretaceous to the Tertiary. By collecting and analyzing samples for foraminiferal content it will be possible to determine if the area contains the Cretaceous-Tertiary Boundary. The samples were mixed with water and Calgon, washed with water, sieved and studied. Examples of *Robulus sp.* or *Lenticulina* were found; that species lived in the coastal plain during the Upper Cretaceous. Charophytes including *Platychara granbastii* and *Feifella gildemestery*, both found in lacustrine to brackish environments during the Maastrichtian, were also present in the studied samples. Both forams and charophytes were found over and below the suggested Cretaceous-Tertiary breccia. Based on the micropaleontological process, this study concludes that the breccia and the changes in paleoenvironments in the El Rayo Formation do not represent the Cretaceous-Tertiary Boundary.